

NON-PUBLIC?: N
ACCESSION #: 8807120110
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Beaver Valley Power Station Unit 1 PAGE: 1 of 3

DOCKET NUMBER: 05000334

TITLE: Reactor Trip Due to Low-Low Level In 'A' Steam Generator
EVENT DATE: 06/09/88 LER #: 88-008-00 REPORT DATE: 07/08/88

OPERATING MODE: 1 POWER LEVEL: 017

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Mr. Thomas P. Noonan, Plant Manager TELEPHONE #: 412-643-1258

COMPONENT FAILURE DESCRIPTION:
CAUSE: A SYSTEM: JB COMPONENT: FCV MANUFACTURER: M121
REPORTABLE TO NPRDS: Y

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT: On 6/9/88, a unit startup was in progress with the main feedwater regulating valves closed and the bypass feedwater regulating valves (BFRV) being controlled in auto. The level in the 'C' BFRV was taken to stop the level increase. At 0149 hours, two of the three level channels in the 'C' steam generator reached their high-high level setpoint (75%) causing a turbine trip, feedwater isolation and a trip of the operating main feedwater pump (FW-P-1B). The motor driven auxiliary feedwater pumps (FW-P-3A and 3B) auto-started on the trip of the main feedwater pump. The 'B' auxiliary feedwater pump was subsequently shutdown. Before resetting the feedwater isolation signal, the 'A' main feedwater pump was started and then the 'A' auxiliary feedwater pump was shutdown. At 0153 hours, two of the three level channels in the 'A' steam generator reached their low-low setpoint (12%) causing a reactor trip. The turbine driven auxiliary feedwater pump (FW-P-2) started followed by the motor driven auxiliary feedwater pumps. There were no safety implications resulting from this event because all protection features (turbine trip, feedwater isolation, reactor trip, auxiliary feedwater pumps start) actuated properly in accordance with valid actuation signals.

(End of Abstract)

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At 0140 hours, on June 9, 1988, a unit startup was in progress. The main feedwater regulating valves were closed and the bypass feedwater regulating valves (BFRV) were being controlled in the auto mode. Adjustments had just been completed on the BFRV's to reduce the steam generator level oscillations that were occurring with the valve controllers in auto.

Following controller adjustments a power increase was begun. At 0143 hours, the Unit was synchronized onto the system grid. With the generator at approximately 20 megawatts, steam generator levels were still oscillating. The 'A' and 'B' steam generator BFRV's appeared to be controlling levels in the auto mode adequately. However, the 'C' steam generator BFRV appeared to be losing automatic control. Manual control was taken to stop the 'C' steam generator level increase.

At 0149 hours, despite these efforts, two of the three level channels on the 'C' steam generator reached their high-high level setpoint (75%) causing a turbine trip, feedwater isolation, trip of the main feedwater pump and the start of the auxiliary feedwater pumps (FW-P-3A & 3B). To minimize the cooldown (FW-P-3B) was immediately shutdown.

As the 'C' steam generator level decreased it was decided to start the main feedwater pump and stop the auxiliary feedwater pump (FW-P-3A). This was done without the feedwater isolation signal being reset. The BFRV's will not open without resetting the feedwater isolation signal. Therefore, when the main feedwater pump was started and the auxiliary feedwater pump stopped; feedwater was not able to reach the steam generators.

At 0153 hours, two of the three level channels in the 'A' steam generator reached their low-low setpoint (12%) causing a reactor trip. The turbine driven auxiliary feedwater pump (FW-P-2) auto started followed by the motor driven auxiliary feedwater pumps as another steam generator reached its low-low level setpoint.

The initiating cause of this event was failure of 'C' BFRV to control adequately in the auto mode. Failure to reset the feedwater isolation signal led to the low-low steam generator

levels.

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The Instrument and Control Department is evaluating the BFRV's operation. The failure to reset the feedwater isolation is considered to be a knowledge and experience deficiency that will be addressed through the operator retraining simulator program.

Since the reactor protection system along with the engineered safety equipment actuated at the proper setpoints and within the required time frame no safety implications resulted. Excessive feedwater addition is analyzed in U.F.S.A.R., Section 14.1.9, "Excessive Heat Removal Due to Feedwater System Malfunctions". The reactor trip due to low steam generator level is covered within the Loss of Normal Feedwater Analysis U.F.S.A.R. Section 14.1.8.

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July 8, 1988
ND3SPM:0251

Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
LER 88-008-00

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

In accordance with Appendix A, Beaver Valley Technical Specifications, the following Licensee Event Report is submitted:

LER 88-008-00, 10 CFR 50.73.a.2.iv., "Reactor Trip Due to Low-Low Level in 'A' Steam Generator After a High-High Level in 'C' Steam Generator Caused a Turbine Trip and Feedwater Isolation".

Very truly yours,

/s/ T. P. NOONAN

T. P. Noonan
Plant Manager

cj

Attachment

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July 8, 1988

ND3SPM:0251

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